

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A communications system supporting communication of data and comprising a number of core networks with a plurality of core network functional server nodes (core nodes) arranged in a pool (SGSN ; MSC....) and a number of radio access networks, each with a number of radio access network control nodes that support pooling of core nodes; (RNC, BSC), wherein at least some of the core nodes are arranged in a pool to, in common, control at least a number of control nodes supporting pooling of core nodes, characterized in that for a transition of a connection of a mobile station (MS) moving from a first radio access network (RAN) control node that does not support not supporting pooling of core nodes to a second RAN control node that does support pooling of core nodes, wherein the first RAN control node is but served by a first core node belonging to the [[a]] pool and to a second control node supporting pooling of core nodes, means are provided for enabling the mobile station to remain connected to said first core node forming part of the pool.

2. (Currently Amended) The [[A]] communication system according to claim 1, wherein characterized in said means for enabling the mobile station to remain connected generates/allocates for [[a]] the mobile station connecting to [[a]] the first core node,

a temporary mobile station identity (temporary MS id)((P)-TMSI), said temporary mobile station identity including a pool identification (NRI) for uniquely identifying the pool core node in the pool to which the core node belongs, that said NRI pool identification is being included in a modified mobile station routing/location area update

message, and ~~in that~~ when the mobile station moves from the coverage of the first RAN control node to the coverage of the second RAN control node, said modified routing/location area update message including the NRI pool identification is relayed to said first core node from said second control node.

3. (Currently Amended) The [[A]] communication system according to claim 2, wherein movement of the MS characterized in that said transition provides an intra core node intersystem change.

4. (Currently Amended) The [[A]] communication system according to claim 1, wherein any one of claims 1-3, characterized in that at least one of the core nodes of the pool comprises a dual or multimode / multimode core node that supports supporting access over more than one radio access network, said radio access networks implementing different radio access technologies techniques.

5. (Currently Amended) The [[A]] communication system according to claim 1, wherein any one of claims 1-4, characterized in that said first and second control nodes belong to the same radio access network, a first part of the radio access network of which not supporting pooling and containing said first control node and a second part of the network which supporting pooling and containing said second control node.

6. (Currently Amended) The [[A]] communication system according to claim 1, wherein any one of the preceding claims, characterized in that the core nodes comprise Serving GPRS Support Nodes (SGSNs) and in that the control nodes comprise Base Station Controllers (BSCs) for GSM communication and/or Radio Network Controllers(RNCs) for UMTS communication using WCDMA radio access technology.

7. (Currently Amended) The [[A]] communication system according to claim 1, wherein any one of the preceding claims, characterized in that at least some

core nodes comprise Mobile Switching Centers (MSC) for circuit switched communication and ~~in that~~ at least some of the control nodes are Base Station Controllers (BSCs).

8. (Currently Amended) The [[A]] system according to claim 1, wherein any one of the preceding claims, characterized in that said first and second control nodes belong to the same radio access network, comprising at least two radio access technologies and one of the radio access technologies comprising a radio access network (RAN) for e. g. UMTS or GSM and in that a part of said UMTS RAN or GSM RAN does not support pooling of core nodes.

9. (Currently Amended) The [[A]] system according to claim 4 wherein and any one of claims 1-3,6, characterized in that the first and second control nodes support different radio access technologies, and ~~in that~~ the first control node comprises a dual mode access node.

10. (Currently Amended) The [[A]] system according to claim 9, wherein characterized in that the first control node is an UMTS RNC not supporting pooling of core nodes, and ~~in that~~ the second control node is a GSM BSC supporting support pooling of core nodes.

11. (Currently Amended) The [[A]] system according to claim 9, wherein characterized in that the first control node is a GSM BSC not supporting pooling of core nodes, and ~~in that~~ the second control node is a UMTS RNC node supporting pooling of core nodes.

12. (Currently Amended) The [[A]] system according to claim 1 wherein any one of claims 1-11, characterized in that the first core node of a pool allocates a temporary mobile station identity ((P)-TMSI) with pool identification (NRI) to a connecting/attaching mobile station irrespectively of whether or not the mobile station

connects to a control node supporting pooling of core nodes or to a control node not supporting pooling of core nodes.

13. (Currently Amended) The [[A]] system according to claim 12,
wherein characterized in that the temporary mobile station comprises a (P) -TMSI
modified in that it is extended with a pool identification comprising the NRI e.g. NRI
(Network Resource id).

14. (Currently Amended) The [[A]] system according to claim 13,
wherein characterized in that said pool identification (NRI) is included in mobile station
(MS) Routing/Location Area Update messages provided to the second control node.

15. (Currently Amended) The [[A]] system according to claim 13 wherein
~~or 14, characterized in that~~ the first core node uses the Gb-flex/Iu-flex mechanism for
allocating a temporary mobile station identity comprising pool unique identity whether
~~irrespectively of either~~ of the radio access networks (parts of networks) are [[is]] not Iu-
flex/Gb-flex enabled.

16. (Currently Amended) A core network functional server node (core
node) in a communication system used in (a) communication system(s) supporting
communication of data for mobility (and session management), and forming part of a
pool of core nodes network functional server nodes, for serving a radio access network
(RAN) to which a mobile station may connect over a RAN control node the core node
comprising: in common able to serve at least one, or part of a, radio access network to
which a mobile station may connect over a radio access network control node,
characterized in that the core node comprises

means for generating a temporary mobile station identity;

means for allocating a pool identification for identifying the pool to which the core
node, serving the RAN control node, belongs, wherein the generating and allocating
means enables the mobile station (MS) to stay connected to a first core node during
movement of the MS from a first control node that does not support pooling of core

nodes to a second control node that does support pooling of core nodes, at a transition of a connection/attachment of a mobile station (MS) from a first control node not supporting pooling of core nodes to another, second, control node supporting pooling of core nodes, keeping the mobile station connected to said first core node.

17. (Canceled)

18. (Currently Amended) The [[A]] core node according to claim 16, wherein characterized in that the temporary mobile station identity is generated and allocated upon entering the area served by any core node forming part of the pool irrespectively of whether or not the mobile station is connected to a control node supporting pooling of core nodes-or-not.

19. (Currently Amended) The [[A]] core node according to claim 18, wherein characterized in that said temporary mobile station identity is included in a routing/location area update message received/relayed from [[a]] the second control node to the first core node enabling keeping the mobile station connected to the first (first) core node.

20. (Currently Amended) The [[A]] core node according to claim 19, wherein characterized in that a mobile station transition from [[a]] the first control node to [[a]] the second control node comprises an intra core-intersystem change.

21. (Currently Amended) The [[A]] core node according to claim 16 wherein any one of claims 16-20, characterized in that the (first) first core node comprises a dual or multimode dual/multi mode core node that supports supporting access over at least two radio access network by implementing different radio access technologies.

22. (Currently Amended) The [[A]] core node according to claim 16 any one of claims 16-21, characterized in that it comprises comprising a Serving GPRS Support Node (SGSN).

23. (Currently Amended) The [[A]] core node according to claim 16 any one of claims 16-21, characterized in that it comprises comprising a Mobile Switching Center(MSC).

24. (Currently Amended) The [[A]] core node according to claim 21 wherein the core node characterized in that it uses the Gb-flex mechanism or the Iu-flex mechanism for allocating a modified temporary mobile identity including a pool identification to a mobile station and in that the transition from the first control node comprises an intra SGSN intersystem change.

25. (Currently Amended) A method for handling connection of a mobile station ~~moving in a communication system supporting communication of data, and comprising a number of core networks associated with a plurality of core network functional server nodes (core nodes) and a number of radio access networks (RAN), each RAN having with a number of radio access network control nodes, wherein at least some of the plurality of core nodes are arranged in a pool for controlling some of the RAN control nodes being arranged in a pool to, in common, control at least a number of radio access network control nodes supporting pooling of core nodes, characterized in that it comprises the step of for: the method comprising the steps of: generating a temporary mobile station identity a mobile station; allocating the temporary mobile station identity and a pool identity to the mobile station upon connecting to a first RAN control node; the mobile station moving from a first routing area controlled by a first RAN control node that does not support pooling of core nodes to a second routing area that is controlled by a second RAN control node that does support pooling of core nodes the mobile station still connected to the first RAN control node, the first RAN control node served by the first core node forming part of the pool of core nodes; and a mobile~~

~~station moving from a first routing area in which it is connected to a radio access network control node not supporting pooling of core nodes, but served by a first core node forming part of the pool, to a second routing/location area controlled by a radio access network control node supporting pooling of core nodes,~~

- keeping the mobile station connected to said first core node ~~at least~~ until the mobile station again enters a routing/location area controlled by a RAN radio network control node not supporting pooling of core nodes.

26. (Currently Amended) The [[A]] method according to claim 25, further comprising wherein characterized in that it comprises the steps of:

- allocating [[a]] the temporary mobile station identity, including the provided with a pool identification, to the [[a]] mobile station upon connecting to the first RAN control node served by first a radio network access control node, served by a core node of the pool, irrespectively of whether or not the first radio access network RAN control node supports pooling of core nodes or not;

- including the pool identification in a the message relating to change/updating of routing/location area when the mobile station moves to a routing/location area covered by [[a]] the second RAN radio access network control node supporting pooling of core nodes;

- relaying the routing/location area change/updating message to the first core node from the second radio access network control node.

27. (Currently Amended) The [[A]] method according to claim 26, wherein characterized in that said first and second RAN radio access network control nodes belong to the same radio access network and implement the same radio access technology.

28. (Currently Amended) The [[A]] method according to claim 25 or 26, wherein characterized in that the first core node comprises a dual or multimode /multimode-access node supporting at least two radio access technologies.

29. (Currently Amended) The [[A]] method according to claim 28, wherein characterized in that the first control node is an UMTS RNC and that the second control node is a GSM BSC or the first control node is a GSM BSC and the second control node is a UMTS RNC vice-versa.

30. (Currently Amended) The [[A]] method according to claim 25 wherein any one of claims 25-29, characterized in that the first and second core nodes are SGSNs.

31. (Currently Amended) The [[A]] method according to claim 25 wherein any one of claims 25-28, characterized in that said first core node and second core node nodes respectively comprises each comprise a mobile switching center (MSC).